

AMENDMENTS TO THE CLAIMS:

Please delete the claims as filed, without prejudice or disclaimer of subject matter, and examine newly presented claims 10-12 as follows:

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Cancelled)
8. (Cancelled)
9. (Cancelled)

10. (new) A vertical field type MRI apparatus for forming magnetic resonance images, including:

at least one field generating superconducting coil system for producing a substantially homogeneous magnetic field in an imaging volume of the apparatus, which coil system includes:

a round outer coil arranged in an outer coil plane;
and

a round supplementary coil arranged within the outer coil, wherein the energizing of the outer coil and of the

supplementary coil generates magnetic fields of opposite direction, wherein the supplementary coil is located in the outer coil plane, and wherein the ratio D_a/D_o of the diameter D_a of the supplementary coil to the diameter D_o of the outer coil is between 0.7 and 0.9; and

a second field generating superconducting coil system for producing the substantially homogeneous magnetic field in the imaging volume of the apparatus, which second coil system includes:

a second round outer coil arranged in a second outer coil plane and having a diameter that is larger than the diameter of the first outer coil,

a second round supplementary coil arranged within the second outer coil and in the second outer coil plane, wherein the energizing of the second outer coil and of the second supplementary coil generates magnetic fields of opposite direction.

11. (new) The apparatus as set forth in claim 10, wherein each gradient coil system includes a flat main gradient coil and a shielding coil, and wherein the first gradient coil system is arranged in a space within said first field generating superconducting coil system and the second gradient coil system is arranged in a space within the second field generating superconducting coil system.

12. (new) A vertical field type MRI apparatus for forming magnetic resonance images, including:

at least one field generating superconducting coil system for producing a substantially homogeneous magnetic field in an imaging volume of the apparatus, which coil system includes:

a round outer coil arranged in an outer coil plane; and

a round supplementary coil arranged within the outer coil, wherein the energizing of the outer coil and of the supplementary coil generates magnetic fields of opposite direction, wherein the supplementary coil is located in the outer coil plane, and wherein the ratio D_a/D_o of the diameter D_a of the supplementary coil to the diameter D_o of the outer coil is between 0.7 and 0.9; and

a second field generating superconducting coil system for producing the substantially homogeneous magnetic field in the imaging volume of the apparatus, which second coil system includes:

a second round outer coil arranged in a second outer coil plane and having a diameter that is larger than the diameter of the first outer coil,

a second round supplementary coil arranged within the second outer coil and in the second outer coil plane, wherein the energizing of the second outer coil and of the second supplementary coil generates magnetic fields of opposite direction, and further including a first and a second container for the first and the second field generating superconducting coil systems, respectively, said containers being arranged to contain a cryogenic medium and communicating with one another in order to exchange the cryogenic medium, one of the containers being provided with a pressure connection for controlling the pressure in the containers as desired.